

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(MBHB Case No. 07-2007-A
Docket No. 1801/88)

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In re the Application of:
Larry D. Annis
Richard Rollin

Serial No.: 10/600,078

Filed: June 20, 2003

For: Connector Device

Group Art Unit: 3761

Examiner: Catharine L. Anderson

Confirmation No.: 6850

TOTAL PAGES: 17
C/M: 1801/88

**Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313**

FACSIMILE TRANSMITTAL LETTER

In regard to the above identified application:

1. We are transmitting herewith the attached
Amendment; and
Notice of Change of Firm
2. With respect to additional fees:
- ☒ A. No additional fee is required.
- ☐ B. Attached is a check in the amount of \$ 0.00.
- ☒ C. Please charge any additional fees or credit overpayment to Deposit
Account No. 13-2490.
3. CERTIFICATE UNDER 37 CFR 1.8(a). The undersigned hereby certifies that this
Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being
transmitted to the USPTO facsimile number 571-273-8300, according to 37 CFR
1.6(d) addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box
1450, Alexandria, VA 22313-1450, ATTN: Catharine L. Anderson.

Respectfully Submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: January 8, 2007

By:

Michael H. Baniak / Michael D. Gannon /
Steven B. Courtright
Reg. Nos. 30,608 / 36,807 / 40,966
Attorneys / Agent

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300 South Wacker Drive
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Facsimile: (312) 913-0002

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PATENT

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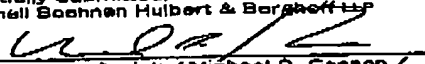
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Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An adapter for connecting a vacuum source to a breast shield with tubing comprising:

a housing attachable to the vacuum source including an internal chamber in communication with the vacuum source;

one or more female coupling components, each of said one or more female coupling components defined by an interior sidewall surface of said housing, said interior sidewall surface including an upper portion with a first sidewall diameter and a lower portion with a second sidewall diameter, the upper portion defining an upper well and the lower portion defining a lower well, and a rim portion between said upper [portion] well and said lower [portion] well connecting said upper [portion] well and said lower [portion] well, said second sidewall diameter being less than said first sidewall diameter, said lower portion including one or more ports formed therein allowing communication of said female coupling component with said internal chamber, and one or more channels formed therein communicating between said port and an opening in said rim portion; and

one or more male coupling components, each of said one or more male coupling components including a first end, a second end, and a passageway extending between said first end and said second end, said first end being sized and shaped to be attached to the tubing, said second end being sized and shaped to be received in one of said one or more female coupling components and having a first end diameter, each of said one or more male coupling components further including a sealing portion between said first end and said second end, said sealing portion having a

sealing surface formed about a periphery thereof, said sealing portion having a second end diameter, said second end diameter being greater than said first end diameter, said sealing portion being sized and shaped to be received in said upper [portion] well of said female coupling component such that said connector sealing surface is in a substantially airtight engagement with said interior sidewall surface.

2. (Original) The adapter of claim 1 wherein said channel is formed axially along said lower portion.

3. (Original) The adapter of claim 1 wherein said one or more female coupling components is further defined by a bottom surface of said housing.

4. (Original) The adapter of claim 3 wherein said bottom surface includes one or more grooves formed therein communicating with said one or more channels.

5. (Original) The adapter of claim 3 wherein said lower portion includes three of said one or more channels formed axially in said lower portion of said interior sidewall surface, said three channels being evenly spaced about said periphery of said lower portion of said interior sidewall surface, and said bottom surface includes three grooves formed radially therein, said grooves in said bottom surface being in respective communication with said one or more channels in said lower portion of said interior sidewall surface.

6. (Original) The adapter of claim 1 wherein two of said one or more female coupling components are provided thereon, and two of said one or more male coupling components are provided to be received in said female coupling components, and further including a stopper, said

stopper being sized and shaped to sealably engage said upper portion of either of said two coupling components.

7. (Original) The adapter of claim 6 wherein said stopper includes an aperture formed therein such that when said stopper is engaged with said female coupling component, said aperture extends between ambient atmosphere and said female coupling component.

8. (Original) The adapter of claim 1 wherein said upper portion includes a generally circular axial cross-section.

9. (Original) The adapter of claim 8 wherein said sealing portion includes a generally circular axial cross-section sized and shaped to match said cross-section of said upper portion.

10. (Original) The adapter of claim 1 wherein said upper portion includes a generally polygonal axial cross-section.

11. (Original) The adapter of claim 10 wherein said sealing portion includes a generally polygonal axial cross-section sized and shaped to match said cross-section of said upper portion.

12. (Original) The adapter of claim 1 wherein said upper portion includes a generally triangular axial cross-section, said upper portion having three arcuate sides.

13. (Original) The adapter of claim 12 wherein said sealing portion includes a generally triangular axial cross-section, said sealing portion including three arcuate sides, said sealing portion being sized and shaped to match said cross-section of said upper portion.

14. (Original) The adapter of claim 1 wherein said sealing portion includes at least one circumferential ring integrally molded thereon.

15. (Original) The adapter of claim 14 wherein said upper portion includes at least one circumferential groove therein, said circumferential ring being sized and shaped to sealably engage with said circumferential groove when said sealing portion is received in said upper portion.

16. (Original) The adapter of claim 1 wherein the vacuum source is a piston pump having a piston cylinder, and a piston, said piston being disposed in said piston cylinder, said adapter is in the form of a cylinder holder which is received on an output end of said piston cylinder, said piston pump generating an intermittent vacuum through reciprocation of said piston with an interior of said piston cylinder, said piston cylinder having an end through which said piston extends in use.

17. (Original) The adapter of claim 1 wherein said second end of said male coupling component is sized and shaped to be received in said lower portion and in the breast shield.

18. (Withdrawn) An improved breast pump assembly comprising:

a vacuum source;

a tube;

one or more milking units including a breast shield which is adapted to receive a woman's breast therein for expression of milk, a container for expressed milk which is in fluid communication with said breast shield, and a tube attaching means for attaching said tube thereto, said tube attaching means being in communication with said breast shield; and

an adapter for connecting said vacuum source to said breast shield with said tube such that intermittent vacuum can thereby be generated in said breast shield to effect the expression of milk from a breast, said adapter including a housing attachable to said vacuum source including an internal chamber in communication with said vacuum source, one or more female coupling components, each of said one or more female coupling components defined by an interior sidewall

surface of said housing, said interior sidewall surface including an upper portion with a first sidewall diameter, a lower portion with a second sidewall diameter, and a rim portion between said upper and lower portions connecting said upper and lower portions, said rim portion having an opening therein, said second sidewall diameter being less than said first sidewall diameter, said lower portion including one or more ports formed therein allowing communication of said female coupling component with said internal chamber, and one or more channels formed therein communicating with said opening in said rim portion, and one or more male coupling components, each of said one or more male coupling components having a first end, a second end, and a passageway extending between said first end and said second end, said first end being sized and shaped to be attached to said tube, said second end being sized and shaped to be received in one of said one or more female coupling components and having a first end diameter, each of said one or more male coupling components further including a sealing portion between said first end and said second end, said sealing portion having a connector sealing surface formed about a periphery thereof, said sealing portion having a second end diameter, said second end diameter being greater than said first end diameter, said sealing portion being sized and shaped to be received in said upper portion of said female coupling component such that said sealing surface is in a substantially airtight engagement with said interior sidewall surface.

19. (Withdrawn) The breast pump assembly of claim 18 wherein said channel is formed axially along said lower portion.

20. (Withdrawn) The breast pump assembly of claim 18 wherein said one or more female coupling component is further defined by a bottom surface of said housing.

21. (Withdrawn) The breast pump assembly of claim 20 wherein said bottom surface includes one or more grooves radially formed therein communicating with said one or more channels.

22. (Withdrawn) The breast pump assembly of claim 21 wherein said lower portion includes three channels formed axially in said lower portion of said interior sidewall surface, said channels being evenly spaced about the periphery of said lower portion of said interior sidewall surface, and said bottom surface includes three grooves formed radially therein, said grooves in said bottom surface being in respective communication with said channels in said lower portion of said interior sidewall surface.

23. (Withdrawn) The breast pump assembly of claim 18 wherein two female coupling components are provided on said adapter, and two male coupling components are provided to be received in said female coupling components, and further comprising a stopper, said stopper being sized and shaped to sealably engage said upper portion of either of said two coupling components.

24. (Withdrawn) The breast pump assembly of claim 23 wherein said stopper has an aperture formed therein such that when said stopper is engaged with said female coupling component, said aperture extends between ambient atmosphere and said female coupling component, said aperture being adapted to regulate vacuum pressure when only a single coupling component is in use, such that the vacuum generated is essentially equal for a given piston stroke whether one or both of said coupling components are being used.

25. (Withdrawn) The breast pump assembly of claim 18 wherein said upper portion includes a generally circular axial cross-section.

26. (Withdrawn) The breast pump assembly of claim 25 wherein said sealing portion includes a generally circular axial cross-section sized and shaped to match said cross-section of said upper portion.

27. (Withdrawn) The breast pump assembly of claim 18 wherein said upper portion includes a generally polygonal axial cross-section.

28. (Withdrawn) The breast pump assembly of claim 27 wherein said sealing portion includes a generally polygonal axial cross-section sized and shaped to match said cross-section of said upper portion.

29. (Withdrawn) The breast pump assembly of claim 18 wherein said upper portion includes a generally triangular axial cross-section, said upper portion having three arcuate sides.

30. (Withdrawn) The breast pump assembly of claim 29 wherein said sealing portion includes a generally triangular axial cross-section, said sealing portion having three arcuate sides, said sealing portion being sized and shaped to match said cross-section of said upper portion.

31. (Withdrawn) The breast pump assembly of claim 18 wherein said sealing portion includes at least one circumferential ring integrally molded thereon.

32. (Withdrawn) The breast pump assembly of claim 31 wherein said upper portion includes at least one circumferential groove therein, said circumferential ring being sized and shaped to sealably engage with said circumferential groove when said sealing portion is received in said upper portion.

33. (Withdrawn) The breast pump assembly of claim 18 wherein said source of intermittent vacuum is a piston pump, said piston pump having a piston cylinder and a piston, said piston being disposed in said piston cylinder, said adapter sized and shaped as a cylinder holder which is received on an output end of said piston cylinder, said piston pump generating an intermittent vacuum through reciprocation of said piston with an interior of said piston cylinder, said piston cylinder having an end through which said piston extends in use.

34. (Withdrawn) The breast pump assembly of claim 18 wherein said second end of said male coupling component is sized and shaped to be received in said lower portion, and on said tube attaching means.

35. (Currently Amended) An adapter for connecting a vacuum source to a breast shield with intermittent vacuum thereby being generated in said breast shield to effect expression of milk from a breast, comprising:

a housing attachable to the vacuum source including an internal chamber in communication with said vacuum source;

one or more female coupling components, each of said one or more female coupling components defined by an interior sidewall surface of said housing, said interior sidewall surface including an upper portion with a first sidewall diameter and a lower portion with a second sidewall diameter, the upper portion defining an upper well and the lower portion defining a lower well, and a rim portion between said upper and lower [portions] wells connecting said upper and lower [portions] wells, said second sidewall diameter being less than said first sidewall diameter, said lower portion including one or more ports formed therein allowing communication of said female coupling

component with said internal chamber, and one or more channels formed therein communicating between said port and an opening in said rim portion; and

one or more male coupling components, each of said one or more male coupling components including a first end, a second end, and a passageway extending between said first end and said second end, said first end being sized and shaped to be attached to a tubing, said second end being sized and shaped to be received in one of said one or more female coupling components and having a first end diameter, each of said one or more male coupling components further including a sealing portion between said first end and said second end, said sealing portion having a sealing surface formed about the periphery thereof, said sealing portion having a second end diameter, said second end diameter being greater than said first end diameter, said sealing portion being sized and shaped to be received in said upper [portion] well of said female coupling component such that said sealing surface is in a substantially airtight engagement with said interior sidewall surface, said sealing portion having at least one circumferential ring integrally molded thereon; and

a stopper, said stopper being sized and shaped to be received in said upper [portion] well of said female coupling component such that said stopper is in a substantially airtight engagement with said interior sidewall surface.

36. (Original) The adapter of claim 35 wherein said channel is formed axially along said lower portion.

37. (Original) The adapter of claim 33 wherein said one or more female coupling component is further defined by a bottom surface of said housing.

38. (Original) The adapter of claim 37 wherein said bottom surface includes one or more grooves formed radially therein communicating with said one or more channels.

39. (Original) The adapter of claim 38 wherein said lower portion includes three of said one or more channels formed axially in said interior sidewall surface, said three channels being evenly spaced about said lower portion of said interior sidewall surface, said bottom surface includes three grooves formed radially therein, each of said grooves in said bottom surface being in respective communication with each of said three channels in said lower portion of said interior sidewall surface.

40. (Original) The adapter of claim 35 wherein two female coupling components are provided thereon for receiving a respective male coupling component, and further including a stopper, said stopper being sized and shaped to sealably engage said upper portion of either of said two female coupling components.

41. (Original) The adapter of claim 40 wherein said stopper includes an aperture formed therein such that when said stopper is engaged with said female coupling component, said aperture extends between ambient atmosphere and said female coupling component, said aperture being adapted to regulate vacuum pressure when only a single coupling component is in use, such that the vacuum generated is essentially the same for a given piston stroke whether one or both coupling components are being used..

42. (Original) The adapter of claim 35 wherein said upper portion includes a generally circular axial cross-section.

43. (Original) The adapter of claim 42 wherein said sealing portion includes a generally circular axial cross-section sized and shaped to match said cross-section of said upper portion.

44. (Original) The adapter of claim 35 wherein said upper portion includes a generally polygonal axial cross-section.

45. (Original) The adapter of claim 44 wherein said sealing portion includes a generally polygonal axial cross-section sized and shaped to match said cross-section of said upper portion.

46. (Original) The adapter of claim 35 wherein said upper portion includes a generally triangular axial cross-section, said upper portion having three arcuate sides.

47. (Original) The adapter of claim 46 wherein said sealing portion includes a generally triangular axial cross-section, said sealing portion having three arcuate sides, said sealing portion being sized and shaped to match said cross-section of said upper portion.

48. (Original) The adapter of claim 35 wherein said upper portion includes at least one circumferential groove therein, said circumferential ring being sized and shaped to sealably engage with said circumferential groove when said sealing portion is received in said upper portion.

49. (Original) The adapter of claim 35 wherein said vacuum source is a piston pump including a piston cylinder, and a piston, said piston being disposed in said piston cylinder, said adapter sized and shaped as a cylinder holder which is received on an output end of said piston cylinder, said piston pump generating an intermittent vacuum through reciprocation of said piston with interior of said piston cylinder, said piston cylinder having an end through which said piston extends in use.

50. (Original) The adapter of claim 35 wherein said second end of said male coupling component is sized and shaped to be received in said lower portion, and on the breast shield.

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Remarks

Claims 1-37 and 35-50 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,797,875 to Silver ("Silver '875"). The action also rejects the claim based on a provisional, nonstatutory double patenting rejection based on claim in a co-pending application owned by the same assignee (Medela Holding AG) as the present application. Applicant will address the provisional rejection after the present claims are found to be in condition for allowance but for this aspect of the action.

With respect to the rejection under §102(b), for Silver '875 to anticipate the current claim, each and every limitation of the claim must be shown in Silver '875.

The present independent claims require a female coupling component. The female coupling component includes upper and lower portions, wherein the upper and lower portion have different diameters.

The claims have been amended to clarify that the upper portion defines an upper well (i.e., receptacle) and the lower portion defines a lower well (i.e., receptacle). The claims have also been amended to clarify that the rim portion is located between the lower well and the upper well. An example of upper and lower wells is shown as items 66 and 67 (respectively) in figure 5 of the present application.

The Silver '875 reference shows a female component (see element 52 in Fig. 2), but the Silver '875 reference does not disclose a female component having an upper well, a lower well, or a rim portion between the upper and lower wells. In the Silver '875 reference, and in particular with respect to Fig. 2, the female component 52 only has a single well or receptacle. The claims, however, require that the female coupling component have an upper well (with one diameter), a lower well (with a different diameter), and a rim portion between the upper well and the lower well. The

Silver '875 reference simply does not have these differently sized wells. As a result, this reference cannot possibly anticipate the claims.

In the Office Action, the Examiner focuses on the male coupling component 54 as shown in figures 22 and 23 of the Silver '875 reference. The Examiner believes that the male coupling component 54 has different diameters (i.e., connector end 82, and the sealing portion 86), and erroneously concludes from this that the female coupling component 52 must necessarily also include portions having different diameters. The Applicant respectfully disagrees. The female coupling component 52 (see figure 2) clearly only has one diameter, and thus only one receptacle or well.

The Silver '875 reference does state that the female coupling component 52 is sized and shaped to fit snugly with the male coupling component 54. This does not mean, however, that the female coupling component necessarily has an upper portion with one diameter and a lower portion with a different diameter. For example, with respect to figures 22 and 23, the connector end 82 of the male connectors 54 fits into the female receptacle 52. The sealing surface 86 is simply meant to provide a seal. The connector end 82 and the sealing surface 86 are both received in the female receptacle 52, *which has just one diameter*. Figure 2 of the Silver reference does not show an upper well, a lower well, or a rim portion between the upper and lower wells. Figure 2 at best, only shows one well (i.e., receptacle).

Furthermore, the present claims require an opening in the rim portion, which Silver '875 reference therefore also lacks. The opening (63) cited in the action does not involve a female coupling component of the Silver '875 device, but rather communicates between the housing (46) internal chamber and the outside of the housing directly through the housing. Thus, the opening cited in the action does not meet the limitations of present Claim 1.

Because Silver '875 does not meet each and every limitation of the present claims, it cannot anticipate the presently claimed invention. Because Silver '875 does not anticipate the present independent claims, it cannot anticipate any of the claims which depend therefrom. Reconsideration is respectfully requested.

Respectfully submitted,

**McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP**

Date: January 8, 2007

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Steven B. Courtright
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Examiner: Catharine L. Anderson

NOTICE OF CHANGE OF FIRM

Dear Sir:

Effective immediately, the law firm handling the above captioned patent application has changed. Accordingly, please refer to this application by the new case number 07-2007-A and direct all subsequent correspondence in this case to:

Michael H. Baniak

McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive
Chicago, Illinois 60606
(312) 913-0001 Telephone
(312) 913-0002 Facsimile

Respectfully submitted,

By:


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Dated: January 8, 2007

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